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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/521,161

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EXAMINER

NGUYEN, HUY TRAM

ART UNIT

PAPER NUMBER

1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,161	Applicant(s) LEFFER, HANS GEORG	
	Examiner HUY-TRAM NGUYEN	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claim 1-7 and 9-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by **Owen et al. (US Patent No. 4,789,528)**.

Regarding Claim 1, Owen et al. reference discloses a reactor system suitable for carrying out chemical reactions comprising one or more common reactant feed lines **(Figure 1, numeral 45 – feed and 51 – reactor feed header)** fed into two or more single unit operated reactors **(Figure 1, numerals 10, 20, 30 and 40)** having one or more common product discharge lines **(Figure 1, numeral 39 - reactor effluent)**, wherein each reactor comprises an a separated individual reactor **(Figure 1, numerals 10, 20, 30 and 40)**.

Regarding Claim 2, Owen et al. reference discloses the reactor system of claim 1 comprising between 3 and 8 single unit operated reactors **(Figure 1, numerals 10, 20, 30 and 40)**.

Regarding Claim 3, Owen et al. reference discloses the reactor system of claim 1, in which each reactor section comprises one or more catalyst beds (**Column 1, Lines 28-32 and 48-51**).

Regarding Claim 4, Owen et al. reference discloses the reactor system of claim 1, in which each of the reactors comprises an indirect heat exchange system, which heat exchange systems are jointly operated (**Figure 1, numerals 19, 17, 15 and 29 and Column 3, Line 67-Column 4, Line 25**).

Regarding Claim 5, Owen et al. reference discloses the reactor system of claims 1 comprising one common feed line (**Figure 1, numeral 51 – reactor feed header – gas reactant is intended use of the apparatus**).

Regarding Claim 6, Owen et al. reference discloses the reactor system of claims 1 comprising one common discharge line (**Figure 1, numeral 39 – reactor effluent - gas product is intended use of the apparatus**).

Regarding Claim 7, Owen et al. reference discloses the reactor system of claim 1 comprising one common reactant discharge line or which system comprises one common product discharge line (**Figure 1, numerals 39 and 51 – liquid reactant and product are the intended use of the apparatus**).

Regarding Claim 10, Owen et al. reference discloses the reactor system of claim 1 comprising four single unit operated reactors (**Figure 1, numerals 10, 20, 30 and 40**).

Regarding Claim 13, Owen et al. reference discloses the reactor system of claim 1 comprising one common product discharge line (**Figure 1, numeral 39 – reactor effluent - liquid product is intended use of the apparatus**).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Haag et al. (US Patent No. 4,279,830) in view of Owen et al. (US Patent No. 4,789,528).**

Regarding Claim 9, Haag et al. reference discloses a process for the preparation of hydrocarbons by reaction of carbon monoxide and hydrogen in the presence of a catalyst at elevated temperature and pressure (Abstract). However, Haag et al. does not disclose that the process is performed in a reactor system comprising one or more common reactant feed lines fed into two or more single unit operated reactors having one or more common product discharge lines, wherein each reactor comprises a separated individual reactor. Owen et al. reference discloses a multi-reactor hydrocarbon catalytic conversion system including at least three reactors having one or

more common product discharge and each reactor comprising a separated individual reactor (**Abstract and Figure 1**). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the multi-reactor system as taught by Owen et al., since Owen et al. states at Column 1, Lines 28-41 that such a modification would be more economical than one very large reactor.

Regarding Claim 14, Haag et al. and Owen et al. references disclose the process of claim 9, wherein the catalyst comprises a cobalt catalyst (**Haag et al. – Column 1, Lines 39-42**).

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Owen et al. (US Patent No. 4,789,528) in view of Kao et al. (US Patent No. 5,266,281)**.

Regarding Claim 11, Owen et al. reference discloses the reactor system of claim 1 except for each reactor comprises a multitubular fixed bed catalyst arrangement. Kao et al. reference discloses a catalytic reactor comprising a multitubular fixed bed catalyst arrangement (Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the multitubular fixed bed catalyst as taught by Kao et al., since Owen et al. states at Abstract that such a modification would produce high purity products due to the improvement in thermal exchange.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Owen et al. (US Patent No. 4,789,528) in view of Cachera et al. (US Patent No. 3,968,653)**.

Regarding Claim 12, Owen et al. reference discloses the reactor system of claim 4 except for the heat exchange system comprises a thermosiphon system. It would have been obvious to one having ordinary skill in the art at the time the invention was

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made to use the thermosiphon heat exchange system as taught by Cachera et al., since Cachera et al. states at Column 1, Line 62-68 that such a modification would provide a fair degree of reliance on natural circulation of the primary cooling medium by thermosiphon.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY-TRAM NGUYEN whose telephone number is (571)270-3167. The examiner can normally be reached on MON- THURS: 6:30 AM - 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN
10/22/08

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797